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ABSTRACT

Computer technology per se is not a solution to the problem of the current "crisis in content" in teacher education programs. Computer assisted instruction (CAI) is defined as the on-line interaction of a student with a computer program for purposes of instruction. The drill-and-practice and tutorial CAI programs serve merely as a medium for presenting assigned content, doing little to make content more relevant to the learner. However, the CAI simulation programs can be more than just media manipulation. With appropriate content they can increase the trainee's concern level, thus functioning as compressed experience, bringing the learner's perception of his needs more in line with the content of educational psychology courses. Computer managed instruction (CMI), which utilizes the powerful information storage, manipulation, and retrieval capabilities of the computer for such purposes as the diagnosis of learner deficiencies, prescription of instructional tasks, record keeping, etc., appears to open up other vast changes in teacher education programs by attempting to relate the program more effectively to the learner. Flexible (highly individualized) self-paced, modular, performance curriculum programs then become possible so that CAI in its narrower definition can be reconsidered. Finally, the advent of CAI-CMI and other computer techniques into the public schools necessitates their introduction as a content area into the teacher education curriculum. (JS)

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# The Crisis of Content in Educational Psychology Courses

## CAN CAI HELP?

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The title of this presentation is not simply a rhetorical question. It demands an answer. A "tongue-in-cheek" answer might be, "Well, very possibly no, but...maybe yes". I feel that an examination of the uses of various computerized instructional techniques in teacher education justifies this flip and somewhat pessimistic answer.

Computer-assisted instruction (CAI) may be defined as the on-line interaction of a student with a computer program for purposes of instruction. Commonly, the program presents specific subject matter in some way which requires frequent student response. This use of the computer in educational settings can be contrasted with situations in which the computer is used primarily for purposes of management of instructional activities. Computer-managed instruction (CMI) utilizes the powerful information storage, manipulation and retrieval capabilities of the computer for such purposes as the diagnosis of learner deficiencies, prescription of instructional activities, facilitation of student decision making within instructional tasks, record keeping, etc. This paper considers my opinions regarding some of the possible applications of CAI and CMI to teacher education.

Drill-and-practice and tutorial CAI programs seem to offer little to resolve the present crisis of content irrelevancy in teacher education courses. These types of CAI programs serve merely as a medium for presenting the assigned content. While such a medium might improve the efficiency or effectiveness of a "unit of subject matter", the medium itself does little to make the content more relevant to the

learner. CAI implementation of a curricular unit could make the material more or less "eye-appealing" to the learner, but unless that content is closely related to the learner's needs, as he perceives them, it will hardly be more relevant to him. Therefore, attempts to take traditional course content and present it via CAI seem doomed to failure from the onset.

However, one area of CAI does look quite promising for teacher education. Simulation programs might contribute to resolving the crisis in content irrelevancy. In a simulation program the learner becomes an "actor" in an on-going situation or a player in a game. This type of program is more than just media manipulation. Appropriate content for viable simulation programs often comes from areas of more immediate concern to teacher training than the traditional educational psychology curriculum. Two examples of such programs come readily to mind:

1) The area of classroom discipline seems like rich ground for simulation programs. Such a program might portray a child demonstrating some sort of "mis-behavior". The teacher trainee must react to the situation. "Action" in the program continues contingent to the teacher's reactions. Such a program could be interesting, fun and relevant to many teacher trainees' concerns.

2) A program designed to develop skills for successfully solving the types of administrative problems commonly confronting teachers is being developed by Wailand Bessent

at The University of Texas.[1] This program follows an "in-basket" format. The teacher trainee handles typical classroom administrative problems. She seeks appropriate information so as to make a good choice among alternative solutions and so as to assess the relevance of information as it is received. Again, this program seems to meet perceived needs of many teacher trainees.

Simulation programs provide a promising tool for increasing the concern level of a starting teacher trainee to that of a more experienced teacher. In doing so, the programs function much as compressed experience. This increase in concern level should cause the teacher trainee to perceive her own needs as being much more in agreement with those that we as professional educators project for her. Hence, by bringing the learner's perception of her own needs more in line with the content of educational psychology courses, simulation programs offer a beginning in the resolution of the "crisis in content".

It must be noted that simulation programs can be non-computer implemented.[2] However, computer implementation could increase the fidelity of the simulation, the number of possible simulated situations,

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[1]This program is summarized in Clark, M. C. and Martin, G. N. "CAI Modules for Teacher Education - a Progress Report". Austin, Texas: R&D Center for Teacher Education, Report No. 38, 1969.

[2]An interesting discussion of simulation in education and training appears as the focus of Educational Technology, Volume 9(10), October, 1969.

the complexity of data manipulation within the simulation, the control of manipulated variables, etc. These potential advantages seem great enough to justify experimentation with the use of CAI simulation programs in teacher education.

CMI appears to help open up other vast changes in teacher education programs by attempting to relate the programs more effectively to the learner. Flexible (highly individualized), self-paced, modular, performance curriculum programs are at best difficult, if not impossible to implement with today's necessarily large number of teacher trainees. CMI can be tremendously helpful by assuming data collection and organization functions. Computerized management techniques can get the teacher trainee more intimately involved in decision making that is more relevant to her own teacher education program. As for example, the R&D Center for Teacher Education is developing an assessment battery to be used upon the entrance of a teacher trainee into a teacher education program.[3] The instruments of the battery are all scored by computer, and the student receives an interpretation of her responses in the form of a computer print-out. From this information, the teacher trainee can make "informed" decisions pertaining to her matriculation through the program. This example differs from more common forms of CMI, but non-the-less it illustrates how computer "management" can provide viable solutions to previously "unsolvable" logistic problems.

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[3]For additional information on this program contact either Professor Donald Veldman or the Dissemination Director, Research and Development Center for Teacher Education, University of Texas, Austin, Texas 78712.

By allowing students to make more relevant decisions about their teacher education programs and educational psychology courses, we can begin structuring the content in the programs to meet each student's expressed needs.

Once modular, flexible teacher programs come into existence (quite possibly with the help of various forms of CMI), CAI in its narrower definition can be reconsidered. CAI (drill-and-practice, tutorial and simulation) programs become an "eligible" media to be used in individual modules. In fact CAI should be used when it appears to be a very efficient means for dealing with a particular content area or set of objectives.

A quite different use for CAI-CMI exists in the development of teacher education programs that meet the future teacher's perceived needs. CAI-CMI programs provide great data gathering potential for evaluation and revision of instructional modules. These techniques are expensive at the moment, but they seem worthy of investigation in an attempt to cost-justify them. If they are "affordable", these techniques could facilitate the development of programs more relevant to the individual teacher trainees.

A final consideration of CAI-CMI examines these techniques as content material in a teacher education program. Computer technology is coming into the schools. Teacher trainees "need" to be introduced to what computers can do (and what they will be doing) to "help" the classroom teacher. Teachers must overcome their fears and feelings of

being threatened by computer technology. Recently, a high school in Austin adopted a computerized report card issuing system. A sizable proportion of teachers in the school are noticably irritated because a computer which they might "fear" has relieved them of the tedious task of filling out grade cards and given them several hours of free time to deal with other "problems" of teaching.

The advent of CAI-CMI and other computer techniques into the public schools necessitates the introduction of this content area into the teacher education curriculum. However, other techniques for increasing the student's level of concern and for getting her to feel the need for learning some uses of computer application must be applied here, or else we will simply increase the "crisis in content".

In conslusion, computer technology is not a solution to the problem of the current "crisis in content" in teacher education programs. Maybe computer technology can be used as a tool to make possible a new or more tastefully formatted education, which considers a students perceived needs as direct input into the determination of her educational program. Such a use would rely heavily upon utilizing computer technology as management mechanisms and as instructional media. We must observe the caution that per see, computers and their programs are no more relevant to a teacher trainee than are the stereotyped educational psychology textbook or course.